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EXAMINER	
MOON, SEOKYUN	

ART UNIT	PAPER NUMBER
2629	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/696,444	MICHELITSCH ET AL.	
	Examiner	Art Unit	
	SEOKYUN MOON	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 November 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *37-42 and 44-50* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *37-42 and 44-50* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 September 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. The Applicants' arguments with respect to the newly amended independent claim 37 have been considered but are moot in view of the new ground(s) of rejection.

Remarks

2. Prior to the rejections of the claims, Examiner respectfully submits the following interpretations of the claimed three modes in view of the prior art of record (US 2002/0109668, herein after "*Rosenberg*"), in order to help the Applicants to understand the Examiner's interpretation regarding the claimed modes in view of Rosenberg.

- Inverted Damping Operation Mode: The mode of the haptic device of Rosenberg in which 1) the velocity of the haptic device is within the range of $V1 < V < V2$ [Rosenberg: fig. 5c] and 2) the position of the haptic device determines the type and the strength of the haptic feedback [Rosenberg: par. (0052) - par. (0057)].

- Holding Force Mode: The mode of the haptic device of Rosenberg in which 1) the velocity of the haptic device falls below V1 [Rosenberg: fig. 5c] and 2) the position of the haptic device determines the type and the strength of the haptic feedback [Rosenberg: par. (0052) - par. (0057)].

- Force Well Mode: The mode of the haptic device of Rosenberg in which 1) the strength of the haptic feedback is adjusted based on the object density [par. (0089) - par. (0090)] and 2)

the position of the haptic device determines the type and the strength of the haptic feedback [Rosenberg: par. (0052) - par. (0057)].

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 37-42**, **44-46**, and **48-50** are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenberg in view of Cunningham et al. (US 2002/0163497, herein after, "*Cunningham*").

As to **claim 37**, Rosenberg teaches a method for operating a haptic interface unit including a haptic device ("*interface device*") [par. (0012) lines 4-8] used by a user for navigating through a displayed list of items [par. (0083) lines 1-5] and configured to exert an interaction feedback force [par. (0012) lines 8-16 and par. (0025) lines 8-15], the method including the steps of:

performing an inverted damping operation mode [fig. 5c: the mode of the haptic device operated within the range of the velocity of $V1 < v < V2$] in which a strength of the interaction feedback force is inverse proportional to a velocity described by velocity data information generated or received by the haptic device;

performing a holding force mode [fig. 5c: the mode of the haptic device operated within the range of the velocity of $v < V1$] in which a strength of the interaction feedback force tends to hold at least one of a user's finger or a hand in place;

performing a force well mode (the mode in which the strength of the haptic effect is adjusted based on the density of the graphical object) [par. (0090) lines 1-13] in which the interaction feedback force is modulated by values of underlying data included in the displayed list of items;

leaving the performing of the inverted damping operation mode when a velocity falls below a damping threshold velocity (When the velocity falls below V1, the magnitude of the force gain is maintained at 1.) [fig. 5c]; and

entering the performing of the inverted damping operation mode when the velocity increases above the damping threshold velocity (When the velocity is between V1 and V2, the magnitude of the force gain is inversely proportional to the velocity.).

Rosenberg does not teach switching from the step of performing the holding force mode to the step of performing the force well mode, when a counterforce greater than a preset force threshold is applied to the haptic device by the user. In other words, while Rosenberg teaches performing the force well mode when the cursor enters into a list of displayed items on the screen [par. (0090) lines 1-13], Rosenberg does not teach the cursor enters into the list of displayed items on the screen when a counterforce greater than a preset force threshold is applied to the haptic device by the user.

However, Cunningham [par. (0148)] teaches the concept of allowing a cursor to enter into a display item when a counterforce greater than a preset force threshold is applied to a haptic device by the device user.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Rosenberg to allow the cursor to enter into the list of display items when a counterforce greater than a preset force threshold is applied to the haptic device by the user, as taught by Cunningham, in order to allow the user to know when the cursor crosses the list of display items.

Rosenberg as modified by Cunningham, therefore, teaches switching from the step of performing the holding force mode to the step of performing the force well mode, when a counterforce greater than a preset force threshold is applied to the haptic device by the user because Rosenberg teaches performing the force well mode when the cursor enters into the list of display items and Cunningham teaches that the cursor enters into the list of display items when a counterforce greater than the preset force threshold is applied to the haptic device.

As to **claim 38**, Rosenberg teaches that the velocity data information describes at least one of a velocity of a pointing unit or pointing device moved by a user operating the haptic device [abstract lines 7-9 and par. (0008) lines 15-19].

As to **claim 39**, Rosenberg teaches that the velocity is a velocity with respect to the haptic device [abstract lines 7-9 and par. (0008) lines 15-19] (when the haptic device is included in the user manipulatable object).

As to **claim 40**, Rosenberg teaches that the velocity data information describes a velocity of the at least one of a finger or a hand movement of a user operating the haptic device [abstract

lines 7-9 and par. (0008) lines 15-19] (Note that when the user manipulatable object of the device of Rosenberg is a mouse, then the hand movement of the user corresponds to the movement of the mouse.).

As to **claim 41**, Rosenberg teaches that in the step of performing the inverted damping operation mode (the operation mode of the haptic interface unit in which the force gain is the function of the velocity in the range between the predetermined velocities V1 and V2) [fig. 5c], the interaction feedback force increases with decreasing velocity and decreases with increasing velocity.

As to **claim 42**, Rosenberg teaches that in the step of performing the holding force mode, the absolute value of the interaction feedback force is increased in a position dependent form to a predetermined value or above a predetermined force level, when the respective velocity decreases below a given threshold value [par. (0054) – (0057)] (Note that Examiner construes the mode in which the velocity falls below V1 and the position of the cursor determines the field force as the claimed holding force mode.).

As to **claim 44**, Rosenberg as modified by Cunningham teaches the method comprising the step of switching from the step of performing the force well mode to the step of performing the holding force mode, when the counterforce lower than the preset force threshold is applied to the haptic device by the user (Note that, as discussed in the rejection of claim 37, the force well mode of Rosenberg as modified by Cunningham is performed only when the counterforce higher than the preset force threshold is applied to the haptic device by the user. Thus, when the counterforce applied to the haptic device by the user is lower than the preset force threshold and the velocity of the haptic device falls below V1, the holding force mode is performed.).

As to **claim 45**, Rosenberg teaches the method comprising the step of entering the step of performing holding force mode when the step of performing the inverted damping operation mode is left (As shown on fig. 5c of Rosenberg, when the velocity falls below V1, the force effect becomes constant.).

As to **claim 46**, Rosenberg as modified by Cunningham does not expressly teach the haptic device comprising a robot arm simulating a force-feedback input device.

However, Examiner takes Official Notice that it is well known in the art to build a robot arm simulating a force-feedback input device.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Rosenberg as modified by Cunningham for a robot arm such that the robot arm simulates a force-feedback input device, in order to provide a robot arm with a better user interface control.

As to **claim 48**, Rosenberg teaches that in the step of performing the force well mode, the force is increased when at least one of a pointing unit or a pointing device is moved by the user towards a boundary between two neighboring items in the displayed list of items [fig. 2] (Note that, as shown on fig. 2, if the "*window 201*" is the target having the attractive force, as the cursor approaches the boundary of the "*window 201*", the strength of the force feedback increases, as explained in paragraph (0052)]).

As to **claim 49**, Rosenberg teaches that graphical items in ordered lists are selected using the method of claim 37 [par. (0083) lines 1-5].

Rosenberg as modified by Cunningham does not teach a method of operating a studio audio mixer including a haptic device, wherein parameters of the studio audio mixer are

displayed as ordered lists of items respectively and the parameters are selected using the method of claim 37.

However, Examiner takes Official Notice that it is well known in the art to display parameters of a studio audio mixer as ordered lists of items.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of claim 37, as taught by Rosenberg as modified by Cunningham, as a means for selecting parameters of a studio audio mixer by including the haptic device in the studio audio mixer, in order to provide a studio audio mixer with a better user interface control.

As to **claim 50**, Rosenberg teaches that graphical items in ordered lists are selected using the method of claim 37 [par. (0083) lines 1-5].

Rosenberg as modified by Cunningham does not teach a method of operating a radio receiver including a haptic device, wherein radio stations are displayed as an ordered list of stations, and one of the radio stations is selected using the method of claim 37.

However, Examiner takes Official Notice that it is well known in the art to display radio stations as an ordered list of stations.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of claim 37, as taught by Rosenberg as modified by Cunningham, as a means for selecting radio stations for a radio receiver by including the haptic device in the radio receiver, in order to provide a radio receiver with a better user interface control.

5. **Claim 47** is rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenberg and Cunningham, as applied to claims 37-42, 44-46, and 48-50, and further in view of Jolly (US 6,373,465).

Rosenberg as modified by Cunningham does not teach that the haptic device includes a push button or a rotary dial augmented with a damping unit including a magnetorheological fluid, wherein the method further comprises the step of applying a magnetic field to align suspended iron particles in the fluid to alter the viscosity of the fluid.

However, Jolly teaches the concept of including a push button or a rotary dial ("*second member 40*") [fig. 2b] augmented with a damping unit including a magnetorheological fluid [col. 18 lines 43-48] in a haptic device, wherein a magnetic field is applied to align suspended iron particles in the fluid to alter viscosity of the fluid [col. 8 lines 13-17].

It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the method of Rosenberg as modified by Cunningham to the haptic device of Jolly, in order to provide a rotary dial haptic device capable of being operated in various modes to provide a better way of controlling the user interface.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SEOKYUN MOON whose telephone number is (571)272-5552. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on 572-272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

March 13, 2010
/Seokyun Moon/
Examiner, Art Unit 2629

/Sumati Lefkowitz/
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